

The Influence of Locus of Control and Aggressiveness of Rock Music Videos on Aggression: A Reanalysis and Methodological Critique of Wann and Wilson (1996)

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The present study reexamines the ANOVA results of a previous study (Wann & Wilson, 1996), and arrives at a different set of conclusions concerning the role of music video violence and locus of control on aggressiveness. Contrary to the previous report, there is evidence of a significant main effect of locus of control on aggressiveness. Although the analyses of the main effect of music video and the interaction were nonsignificant, effect size data suggest that such effects would have been significant had the original study been larger ($N = 28$). Given the paucity of research examining the effects of music video violence on aggression, the reanalysis of the Wann and Wilson (1996) data suggests that carefully controlled experimental research in this area would be fruitful.

The continued high level of violent crimes in the U.S. in recent decades has been attributed to a number of factors, including the widespread availability of various violent entertainment media (American Psychological Association, 1993). One of the more popular and influential of these media is rock music videos, featured on MTV and elsewhere. The influence of music videos on behavior is especially important to examine given the potential of music videos to include both aggressive lyrical content and violent visual cues. Contemporary theories of aggression suggest that both environmental cues, such as music videos, and individual differences may interact to increase the propensity to behave aggressively in a given situation (e.g., Anderson, Anderson, & Deuser, 1996; Bushman, 1995, 1996; Geen, 1990). This "person in the situation" approach has been useful in increasing our knowledge base regarding the psychological underpinnings of aggressive behavior (Bushman, 1995).

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There is evidence that individuals with an internal locus of control tend to behave more aggressively when provoked (Dengerink, O'Leary, & Kasner, 1975) and in the Milgram obedience paradigm (Blass, 1991). Locus of control is the degree to which individuals believe they are in control of their surroundings (Rotter, 1966). Individuals who believe that they can influence events around them are referred to as having an internal locus of control, whereas individuals who believe that they have no influence on their surroundings are referred to as having an external locus of control. "Internals" are more responsive to aggressive cues, primarily because they are more likely to perceive the potential instrumental value of aggressive behavior in the presence of those cues (Baron & Richardson, 1994).

There is now ample evidence that exposure to media violence increases aggression in experimental and field studies (e.g., Paik & Comstock, 1994). In terms of media violence, exposure to violent media (e.g., films) increases the likelihood of aggressive behavior due to increased accessibility to aggression-related knowledge structures (Huesmann, 1986). Once primed, these aggressive knowledge structures should bias individuals' appraisals of the situation, their own emotional state, and even appraisals of their own propensity to behave aggressively.

Few studies have examined the role of violent music videos on aggression, in spite of their continued popularity among adolescents and young adults. The few studies that have been conducted paint a decidedly mixed picture. There is some evidence suggesting that the violence depicted in music videos increases favorable attitudes toward the use of violence (Johnson, Jackson, & Gatto, 1995) and antisocial behavior (Hansen & Hansen, 1990). Only one laboratory experiment has directly examined the role of violent music videos on aggressive behavior (Moore, 1989). In that experiment, Moore (1989) had participants view a music video containing nonviolent, erotic, or violent content. After viewing the video, participants were given the opportunity to retaliate against a confederate by delivering electric shocks. Moore (1989) found no evidence of a relationship between music video violence and aggressive behavior.

The most recent study that attempted to address the impact of violent music videos on aggression was conducted by Wann and Wilson (1996). In that study, the authors examined the influence of exposure to violent rock videos on participants' appraisals of their own aggressiveness. Participants were preselected based on their scores on a measure of locus of control (Rotter, 1966). After completing a measure of Buss and

Durkee's (1957) Hostility Inventory, they were randomly assigned to view either a violent music video or a nonviolent music video. After viewing the video, participants once again completed the Hostility Inventory. Analyses of the change scores on the Hostility Inventory failed to yield any significant findings, according to the authors. The lack of reported significant findings in the Wann and Wilson (1996) study, along with the mixed findings in the few available studies, may be prematurely deterring investigators from examining the effects of music video violence on aggression.

This paper focuses on the Wann and Wilson (1996) study for two reasons. First, the authors' null findings were based on a very small sample (28 participants). Given the small to moderate effect sizes of many personality and situational variables in social psychological research (Anderson & Bushman, 1997), Wann and Wilson's conclusions based on such a small sample seem questionable. The present reanalysis will attempt to demonstrate that significant findings are either present in the data, or that the magnitude of the effects is sufficiently strong to suggest that significant findings could be obtained with a larger sample.

The second objective of the present study is to demonstrate the utility of conducting secondary analyses on published data as a means of uncovering otherwise ignored relationships between independent and dependent variables or for detecting potential data analytic errors. Although it is tempting to accept the contents of a report at face value, doing so risks the potential of accepting as fact statements that are not accurate. The approach taken here is that of the reasonable skeptic, who questions (rather than accepts) reported findings. In addition, there will be a discussion of some additional problems with the study that warrant caution in the interpretation of Wann and Wilson's (1996) findings.

METHOD

The following analyses are based on data collected from 14 men and 14 women in the original Wann and Wilson (1996) paper. The analyses for main effects of music video and locus of control and the interaction of music video and locus of control were recalculated using DSTAT software (Johnson, 1989), based on the means and standard deviations (see Table 1) provided by Wann and Wilson (1996). In addition to recalculating the ANOVA, effect sizes (d) were computed. In estimating the ANOVA results and effect sizes, it was assumed that the cell sizes were equal. (Wann and Wilson did not provide complete methodological details necessary for a replication or reanalysis.)

TABLE 1 Change in Self-Reported Aggressiveness as a Function of Aggressiveness of Music Video and Locus of Control (means and standard deviations)

<i>Locus of Control</i>	<i>Music Video</i>			
	<i>Aggressive</i>	<i>Non-Aggressive</i>		
Internal	-0.22 (.36)	-0.44 (.39)	-0.33	(.38)
External	-2.92 (1.04)	-3.58 (1.96)	-3.25	(1.50)
	-1.57 (.70)	-2.01 (1.18)		

Note: Standard deviations are in parentheses.

RESULTS

Although the main effect of music video was nonsignificant, the analysis shows a moderate effect size, $F(1, 24) = 1.04$, $p > .25$, $d = .37$. Participants who viewed the nonviolent music video showed a trend toward more of a decrease in their aggression scores than did those who viewed the violent music video (see Table 1). There was a strong relationship between locus of control and change in aggression scores following viewing a music video, $F(1, 24) = 45.87$, $p < .001$, $d = 2.48$. Individuals with an external locus of control showed more of a decrease in their aggression scores than did individuals with an internal locus of control. Finally, the video by locus of control interaction was nonsignificant, $F(1, 24) = .26$, $p > .25$. However, an examination of effect sizes suggests that the effect of music video on aggressiveness was stronger for high internal locus of control individuals ($d = .56$) than for high external locus of control individuals ($d = .43$). These findings hint at the possibility of an interaction given a sufficiently large sample.

DISCUSSION

Contrary to Wann and Wilson (1996), a reanalysis of their data suggests at least one statistically significant finding. There is a main effect of locus of control, suggesting that individuals with an external locus of control show more of a decrease in self-reported aggressiveness after viewing a music video than individuals with an internal locus of control (who show almost no decrease). This finding is consistent with

previous research in which internal locus of control has been associated with higher levels of aggressiveness than external locus of control (Dengerink et al., 1975), but inconsistent with the hypothesis specified by Wann and Wilson (1996).

In addition, effect size analyses suggest that the main effect of music video and the interaction of music video and locus of control were moderate, but were undetected due to the small size of the sample. The difference in change scores between individuals with internal and external locus of control is more pronounced for individuals assigned to the nonaggressive music video condition than those assigned to the aggressive music video condition. The largest decrease in aggressiveness occurs for individuals with an external locus of control who viewed the nonaggressive video.

Some caution in interpreting the data is in order. First, the fact that a decrease in self-reported aggressiveness was found in both aggressive and nonaggressive music video conditions could be due to participants' suspicions regarding the purpose of the experiment. Depending on when the initial administration of the aggression questionnaire occurred, that questionnaire could have suggested to participants that they were in an aggression experiment, resulting in their reporting being less aggressive at post-test. Unfortunately, the authors provide no suspicion data in their report. One difficulty in interpreting the difference scores reported by Wann and Wilson (1996) is that there is no way of knowing what the baseline scores were for each of the conditions. Thus, although the pattern of means at first glance is one that is theoretically plausible, their interpretation is not entirely clear cut. One would be hesitant, based on the present data, to conclude that individuals identified as having an internal locus of control perceive themselves as more aggressive than those with an external locus of control, or that nonviolent music videos decreased self-reported aggressiveness of individuals with an external locus of control to a greater degree than was the case for those with an internal locus of control.

Clearly, as Wann and Wilson (1996) suggest, additional research examining the influence of music video violence and individual differences on aggressive behavior is needed. Such behavioral effects may be examined in the laboratory utilizing a competitive reaction time (e.g., Taylor, 1967) or retaliation paradigm (e.g., Lindsay & Anderson, *in press*), in which participants are given the opportunity to deliver noxious stimuli (e.g., shocks or noise blasts) to an imaginary competitor. These paradigms have been useful in detecting interactions of individual differences and exposure to media violence in other experiments (e.g., Bushman, 1995).

A more complete understanding will require investigators to turn their attention to the interaction of music videos and multiple individual difference measures (e.g., locus of control, trait hostility). Dependent measures should include hostile affect (e.g., state hostility), accessibility of aggression-related cognitions, and biases in the appraisal process (e.g., hostile attribution bias, hostile perception bias). There is some evidence from the media violence literature suggesting that there is an interaction of violent films (or film clips) and trait aggressiveness on cognitive and affective processes (e.g., Anderson, 1997; Bushman, 1995; Bushman & Geen, 1990). Presumably, similar findings should obtain when participants are exposed to violent music videos.

Finally, the present study demonstrates the ease and necessity of conducting secondary analyses on published data. The advancement of our understanding of social and personality processes depends on the accuracy of the analyses appearing in published reports, dissertations, and conference proceedings. Inaccurate reporting, at best, makes it more difficult for scholars to draw conclusions from a body of research. At worst, inaccurate reporting may lead researchers to ignore a potentially interesting area of inquiry, especially when there are few available published reports. Assuming that the authors of a paper provide all necessary information (e.g., means, standard deviations, F values, etc.), it is possible for readers to reanalyze the data, either by recomputing the original statistical analyses in order to check for errors, and to compute effect sizes. Assuming that the original authors have provided sufficient information, an ANOVA summary table may be reconstructed using available software such as DSTAT. Secondary analyses enable readers to determine for themselves the accuracy of the original authors' computations, and the degree to which their conclusions are justified. In any event, the reanalyses in the present paper serve as a reminder that readers should carefully examine reported findings, and should refrain from taking what they read at face value.

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